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ATEP 572.01: Therapeutic Exercise

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Therapeutic Exercise
ATEP 572

Instructor: Valerie Moody PhD, ATC, LAT, WEMT-B, CSCS **Semester:** Spring 2014
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Class Meeting: Monday, Wednesday 10:10-12:00 McGill Hall 235

Course Prerequisites: Acceptance into the ATEP.

Textbooks and Readings:

- 1) Outside articles/chapters assigned by the instructor
- 2) Required: Prentice, W. Rehabilitation Techniques for Sports Medicine and Athletic Training. 5th ed. McGraw-Hill; New York: 2011
- 3) Recommended: Baechle, & Earle. Essentials of Strength Training and Conditioning. 3rd ed. Human Kinetics; 2008.

Course Description:

Theories and application methods of comprehensive therapeutic treatment and rehabilitation programs for injuries commonly sustained by the physically active.

Course Objectives:

A. Objectives:

At the completion of the course students should be able to:

- 1) Identify components of a comprehensive plan of care for an injured athlete.
- 2) Describe the effects of therapeutic exercise on the inflammatory response, soft tissue and bony repair and return to athletic participation.
- 3) Discuss all aspects of rehabilitation in relation to goals and goal setting
- 4) Describe the importance of case studies
- 5) Improve confidence with case studies to determine what is the most appropriate sequence of rehabilitation
- 6) Integrate characteristics of the inflammation phase, pain cycle, and the physical principles and physiological responses of an injury and develop a progressive therapeutic program.
- 7) Prepare and instruct patients in home programs of therapeutic exercise for specific sport related injuries.
- 8) Develop injury care plans for injuries to the foot, ankle, knee, hip, spine, shoulder, elbow, and hand.
- 9) Incorporate therapeutic exercise equipment within the rehabilitation process effectively.
- 10) Revise goals and objectives and develop criteria for progression and return to competition based of level of function and patient outcomes
- 11) Demonstrate and describe appropriate measurements and functional measurements
- 12) Describe indications, contraindications, theory, and principles for the incorporation and application of various contemporary therapeutic rehabilitation techniques
- 13) Further objectives are listed at the beginning of each chapter and will be highlighted during class.

NATA Competencies and Laboratory Proficiencies:

The NATA Educational Competencies and Proficiencies were established by the National Athletic Trainers' Association identifying the minimum knowledge and skills to be mastered within an entry-level athletic training education program. These competencies are specific to this course and are arranged based on the twelve content areas that are the basis behind the Athletic Training Major. Proficiencies will be completed via practical examination, projects, plans of care and clinical education.

Teaching Methodology

The primary method of instruction will be through demonstration/discussion. Any lecture/demonstrations/discussions will be supplemented by directed laboratory experiences and discovery learning as it pertains to the development of skills necessary to perform rehabilitation of athletic injuries. Students should be practicing the skills learned in this class and completing appropriate proficiencies while in the clinical class and at their clinical setting.

Evaluation of Student Outcomes:

Written/Practical Examinations

These examinations are intended to assess the student's awareness and understanding of the concepts covered by the course content. Items on these examinations will be derived from the text, discussions, course handouts. The content of each examination will usually mirror the content of the unit most recently studied. Examination methodology may include multiple choice, true-false, short answer, and essay questions. The final examination is cumulative. Each student will complete two practical exams based upon his/her assigned plan of care. Students will turn in their assigned plans of care one week prior to their scheduled practical examination. These exams will allow students to demonstrate his/her proficiency in implementing and carrying out a rehabilitation program, in addition to selecting and instructing different therapeutic exercises. **Any station or skill that receives a score below an 80% will require remediation to be scheduled with the instructor.**

Quizzes

Short take-home quizzes will be given each week reviewing applied anatomy and related concepts.

Teaching Presentation

Students will be assigned a current topic relating to exercise and rehabilitation (ie Cross Fit, Oula, Tabata training, etc). Students will be expected to design a 25 minute lab session in which the student will instruct and lead the class. Background information should be provided ahead of time (any readings or handouts), so the class time will be dedicated to engaging class members in performing or conducting the skills related to the topic. Students will be evaluated on handouts provided ahead of time, ability to lead and instruct the class, and overall content of the presentation.

Rehab Project

Students will design and create a product that may be used for therapeutic exercise and can be integrated into a rehabilitation program for a facility that has a small budget. Students will be responsible for the cost of the materials to design their product. Students will then create an infomercial video to present their product, demonstrate the function of the equipment, and advertise their product to classmates. Classmates will be providing feedback and will impact presentation grade. A project handout will be provided with more details.

Rehabilitation Plans of Care

Students will prepare two Plans of Care describing the rehabilitation of an injured athlete. Students will be randomly assigned 2 cases each- one that is an operative injury and the other that is non-operative injury. A brief history and evaluation findings will be provided for each case to guide each student in developing their plans of care.

The following should be addressed for each plan of care:

- 1) The clinical findings and functional limitations that suggest the need for rehabilitative care in

- returning the athlete to competition,
- 2) A plan of care to address the needs of the injured athlete,
- 3) Short and long term clinical functional goals,
- 4) Estimated time required to achieve goals and the rationale for your selections,
- 5) Specific rehabilitation techniques you would use to achieve the goals and the rationale for your selections,
- 6) Contraindications/precautions you considered in devising your plan of care, and
- 7) Criteria for returning the athlete to practice and competition.

All papers must be typed and double-spaced. Reference to peer-reviewed medical literature related to pathology, medical management, surgical management and rehabilitation is required. References must be in AMA format (see *Journal of Athletic Training*). A minimum of 8 references is required.

Rehab Notebook

Each student will need to turn in a notebook with your final. The rehab notebook is meant to be a reference for you after the class. You will be graded on content, organization, neatness, and ability to access information. See notebook handout for more details.

Attendance

Mandatory - Prior arrangements should be made for excused absences to make-up work. For any unexcused absence, makeup work will not be accepted.

Laboratory Attire:

On days which class will be held in a laboratory setting students will be expected to wear attire appropriate for the participation in each functional activity. Shorts, t-shirt and tennis shoes would be appropriate unless otherwise stated in lecture. **Inappropriate attire will result in an uncompleted laboratory experience and absence for that day.** There are no exceptions.

Course Evaluation:

- 5% - Quizzes
- 5% - Teaching Presentation
- 10% - Creative Rehab Project
- 20% - Midterm Exam (Written and Practical)
- 15% - Plan of Care- Operative Injury (grade includes outline, draft, revision of paper)
- 15% - Plan of Care- Non-Operative Injury (grade includes outline, draft, revision of paper)
- 10% - Rehab Notebook
- 20% - Final Exam (Written and Practical)
- 100%

*All quizzes and exams are cumulative unless otherwise noted

Grading Scale:

90-100% = A 80- 89% = B 70- 79% = C 60- 69% = D <60% = F

The instructor reserves the right to award + or – grade where deemed appropriate

All course requirements must be completed with a grade of C or better to successfully complete this course.

Americans with Disabilities Act (ADA):

Students with disabilities may request reasonable modifications by contacting me. The University of Montana assures equal access to instruction through collaboration between students with disabilities, instructors, and Disability Services for Students (DSS). "Reasonable" means the University permits no fundamental alterations of academic standards or retroactive modifications. For more information, please consult <http://www.umt.edu/disability>

Student Conduct Code: *All students must practice academic honesty. Academic misconduct is subject to an academic penalty by the course instructor and/or a disciplinary sanction by the University. All students need to be familiar with the Student Conduct Code. The Code is available for review online at <http://www.umt.edu/SA/VP/SA/index.cfm/page/1321>*

THERAPEUTIC EXERCISE
ATEP 572
COURSE OUTLINE/SPRING 2014

January 27	Introduction lecture and Lab; Designing a rehab program; Reading Ch 1-4
January 29	Healing Process Review; Psychological Considerations; Give out POC assignments
February 3	Establishing core stability Reading Ch 5-6; Quiz #1 Due
February 5	Regaining neuromuscular control
February 10	Regaining Postural Stability and Balance Reading Ch 7-8; Quiz#2 Due
February 12	Restoring ROM/Flexibility
February 17	Presidents Day- No Class Meeting
February 19	Regaining Muscular Strength/ Maintaining aerobic capacity/endurance Reading Ch 9-10; Quiz #3 Due
February 24	Plyometrics; OKC vs CKC Reading Ch 11-13; Quiz #4 Due; Outline/Draft POC 1 due
February 26	Special Topics Presentations FYM's: Power/Olympic Lifts, Functional Movement Screens, Cross Fit, Tabata training
March 3	Joint Mobilization and traction techniques; PNF techniques Reading Ch 14; Quiz #5 Due
March 5	Midterm Written Exam
March 10	Functional Progression/Testing Reading Ch 16;
March 12	Low leg, foot and ankle rehabilitation Reading Ch 22-23; POC Draft #2 due Friday March 14th by 12:00
March 17	Low leg, foot and ankle rehabilitation Reading Ch 22-23; Quiz #6 Due
March 19	Knee Rehabilitation Reading Ch 21; Final Draft POC Due Friday March 21st by 12:00
March 24	Midterm Practical Exam
March 26	Midterm Practical Exam
March 31, April 2	Spring Break
April 7	Knee Rehabilitation Reading Ch 21, Quiz #7 Due
April 9	Groin, hip, thigh rehab rehabilitation Reading Ch 20, Quiz #8 Due; New POC given out for UE
April 14	Groin, hip, thigh rehab rehabilitation Reading Ch 20
April 16	Group Project Due- POC 2 Draft #1 Due
April 21	Shoulder Rehabilitation Reading Ch 17; Quiz #9 Due
April 23	Shoulder Rehabilitation
April 28	Elbow, wrist and hand rehabilitation Reading Ch 18-19; Quiz #10 Due; POC 2 Draft #2 Due
April 30	Elbow wrist and hand rehabilitation
May 5	Spine rehabilitation Reading Ch 24; Quiz #11 due
May 7	Spine Rehabilitation; Aquatic therapy Reading Ch 15; Due Plan of Care #2
May 12-16	Final Practical Exam TBD Final Written Exam TBD

HHP 372 - Rehabilitation of Athletic Injuries			
Code	Description	Instructed	Evaluated
EBP-5	<input type="checkbox"/> Develop a relevant clinical question using a pre-defined question format ... (eg, PICO= Patients, Intervention, Comparison, Outcomes; PIO = Patients, Intervention, Outcomes)		
EBP-6	<input type="checkbox"/> Describe and contrast research and literature resources including ... databases and online critical appraisal libraries that can be used for conducting clinically-relevant searches.		
EBP-7	<input type="checkbox"/> Conduct a literature search using a clinical question relevant to ... athletic training practice using search techniques (eg, Boolean search, Medical Subject Headings) and resources appropriate for a specific clinical question.		
EBP-14	<input type="checkbox"/> Apply and interpret clinical outcomes to assess patient status, progress, ... and change using psychometrically sound outcome instruments.		
PHP-19	<input type="checkbox"/> Instruct clients/patients in the basic principles of ergonomics and ... their relationship to the prevention of illness and injury.		
PS-2	<input type="checkbox"/> Explain the theoretical background of psychological and emotional ... responses to injury and forced inactivity (eg, cognitive appraisal model, stress response model).		
PS-6	<input type="checkbox"/> Explain the importance of educating patients, parents/guardians, and ... others regarding the condition in order to enhance the psychological and emotional well-being of the patient.		
PS-7	<input type="checkbox"/> Describe the psychological techniques (eg, goal setting, imagery, ... positive self-talk, relaxation/anxiety reduction) that the athletic trainer can use to motivate the patient during injury rehabilitation and return to activity processes.		
PS-8	<input type="checkbox"/> Describe psychological interventions (eg, goal setting, motivational ... techniques) that are used to facilitate a patient's physical, psychological, and return to activity needs.		
PS-9	<input type="checkbox"/> Describe the psychosocial factors that affect persistent pain sensation ... and perception (eg, emotional state, locus of control, psychodynamic issues, sociocultural factors, personal values and beliefs) and identify multidisciplinary approaches for assisting patients with persistent pain.		
PS-10	<input type="checkbox"/> Explain the impact of sociocultural issues that influence the nature and ... quality of healthcare received (eg, cultural competence, access to appropriate healthcare providers, uninsured/underinsured patients, insurance) and formulate and implement strategies to maximize client/patient outcomes.		
PS-12	Identify and refer clients/patients in need of mental healthcare.		
TI-1	<input type="checkbox"/> Describe and differentiate the physiological and pathophysiological ... responses to inflammatory and non-inflammatory conditions and the influence of these responses on the design, implementation, and progression of a therapeutic intervention.		

TI-2	☐ Compare and contrast contemporary theories of pain perception and pain ... modulation.	✓	✓
TI-3	☐ Differentiate between palliative and primary pain-control interventions.	✓	✓
TI-4	☐ Analyze the impact of immobilization, inactivity, and mobilization on the ... body systems (eg, cardiovascular, pulmonary, musculoskeletal) and injury response.	✓	✓
TI-5	☐ Compare and contrast the variations in the physiological response to ... injury and healing across the lifespan.	✓	✓
TI-6	☐ Describe common surgical techniques, including interpretation of ... operative reports, and any resulting precautions, contraindications, and comorbidities that impact the selection and progression of a therapeutic intervention program.	✓	✓
TI-7	☐ Identify patient- and clinician-oriented outcomes measures commonly used ... to recommend activity level, make return to play decisions, and maximize patient outcomes and progress in the treatment plan.	✓	✓
TI-8	☐ Explain the theory and principles relating to expected physiological ... response(s) during and following therapeutic interventions.	✓	✓
TI-10	☐ Integrate self-treatment into the intervention when appropriate, ... including instructing the patient regarding self-treatment plans.	✓	✓
TI-13	☐ Describe the relationship between the application of therapeutic ... modalities and the incorporation of active and passive exercise and/or manual therapies, including, therapeutic massage, myofascial techniques, and muscle energy techniques.	✓	✓
TI-14	☐ Describe the use of joint mobilization in pain reduction and restoration ... of joint mobility.	✓	✓
TI-18	☐ Explain the relationship between posture, biomechanics, and ergonomics ... and the need to address these components in a therapeutic intervention.	✓	✓
TI-19	☐ Identify manufacturer, institutional, state, and/or federal standards ... that influence approval, operation, inspection, maintenance and safe application of therapeutic modalities and rehabilitation equipment.	✓	✓

HHP 373 - Rehabilitation of Athletic Injuries Lab

Code	Description	Instructed	Evaluated
CIP-7	☐ Select and integrate appropriate psychosocial techniques into a patient's ... treatment or rehabilitation program to enhance rehabilitation adherence, return to play, and overall outcomes. This includes, but is not limited to, verbal motivation, goal setting, imagery, pain management, self-talk, and/or relaxation.	✓	✓
PD-9	☐ Specify when referral of a client/patient to another healthcare provider ... is warranted and formulate and implement strategies to facilitate that referral.	✓	✓

PHP-27	<input type="checkbox"/> Compare and contrast the various types of flexibility, strength training, ... and cardiovascular conditioning programs to include expected outcomes, safety precautions, hazards, and contraindications.		
PS-18	<input type="checkbox"/> Provide appropriate education regarding the condition and plan of care to ... the patient and appropriately discussion with others as needed and as appropriate to protect patient privacy.		
TI-11	Design therapeutic interventions to meet specified treatment goals.		
TI-11a	<input type="checkbox"/> Assess the patient to identify indications, contraindications, and ... precautions applicable to the intended intervention.		
TI-11b	Position and prepare the patient for various therapeutic interventions.		
TI-11c	<input type="checkbox"/> Describe the expected effects and potential adverse reactions to the ... patient.		
TI-11d	Instruct the patient how to correctly perform rehabilitative exercises.		
TI-11e	<input type="checkbox"/> Apply the intervention, using parameters appropriate to the intended ... outcome.		
TI-11f	<input type="checkbox"/> Reassess the patient to determine the immediate impact of the ... intervention.		
TI-12	<input type="checkbox"/> Use the results of on-going clinical examinations to determine when a ... therapeutic intervention should be progressed, regressed or discontinued.		
TI-15	<input type="checkbox"/> Perform joint mobilization techniques as indicated by examination ... findings.		
TI-20	<input type="checkbox"/> Inspect therapeutic equipment and the treatment environment for potential ... safety hazards.		